THE TAXONOMIC STATUS OF THE ROSY BOA *LICHANURA ROSEOFUSCA* (SERPENTES: BOIDAE)

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Abstract.— Evidence is presented indicating that *Lichanura roseofusca* and *Lichanura trivirgata* are conspecific. Data include the report of an intermediate specimen from El Arco, Baja California Norte, a site midway between the previously known peninsular ranges of the two species; captive hybridization provides additional support for the conclusion.

The close relationship of the boas *Lichanura trivirgata* Cope and *Lichanura roseofusca* Cope has long been recognized, due principally to the overlap of most scale characters and because the desert boa *L. roseofusca gracia* Klauber appears to be an intermediate between the two species (Klauber 1931). The problem in establishing their relationship stems from the rather broad gaps between their known ranges in central Baja California and southwestern Arizona.

Subsequent to the description of *L. r. gracia*, Klauber (1933) reported a single specimen from Guaymas, Sonora. This specimen agrees exactly with *L. trivirgata* in coloration but has scale counts resembling those of *L.r. gracia*. He stated that the specimen might be considered an intergrade of *L. trivirgata* and *L.r. gracia*. This is somewhat surprising since he restricted *L. trivirgata* to the cape region of Baja California, thus necessitating a transgulfian dispersal of *trivirgata* to facilitate hybridization. Gorman (1965) reemphasized the wide variation in meristic characters within the genus, as first demonstrated by Stejneger (1891), and referred to Klauber's (1933) scale counts and color descriptions as evidence indicating that the populations from southern Arizona, Sonora, and southern Baja California are all one form, *L. trivirgata* (all have three primary stripes of chocolate brown on a light drab background).

The variation seen in the genus led Klauber (1931, 1933) to speculate that we might be dealing with a single, polytypic species, *L. trivirgata*. He suggested, however, that before such a designation be considered we should await the collection of more material from regions of potential hybridization.

Gorman (1965) and Bostic (1971) commented on new material from the range gaps and stated that the basis was yet lacking for uniting the two species because of the great uniformity of *L. trivirgata* throughout its range and the absence of obvious intergrades. The range gaps were shown to be separations of approximately 160 km (100 miles) in both central Baja California and southwestern Arizona. In spite of these appraisals, several authors (Miller and Stebbins 1964, Lowe 1964, Soulé and Sloan 1966) have proposed, in advance of adequate evidence, to unite the two species. The needed evidence is reported in this paper.

During the summer of 1979, an unusual specimen of *L. trivirgata* (Fig. 1) was collected at the town known as El Arco, Baja California Norte (28°02′N, 113°27′W). The specimen, taken as it was crossing the road in front of the military base on 17 July at 2225 hours by Kenneth A. Stockton, is unique for two reasons. First, its coloration[5] and scale counts are intermediate between the two species. Second, the geographic location of El Arco is midway between the previously reported limits for the two species (Bostic

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[5]Color characters with numbers refer to the color-name charts by Kelly (1958).

1971). Scale counts are as follows: 224 ventrals, 48 subcaudals, 41 dorsal scale rows, 15–14 supralabials, 15–16 infralabials, and 10–11 oculars. The specimen is an adult male measuring 577 mm total including the 85 mm tail. The coloration and color pattern consists of three primary stripes of deep brown (No. 56) on a ground of light gray olive (No. 109). When one considers all these characters, the El Arco specimen appears to be the obvious intergrade spoken of by Gorman (1965). Although this report essentially closes the range gap on the Baja California peninsula, a gap yet remains between the Kofa Mountains and Organ Pipe Cactus National Park in southwestern Arizona. Fowlie (1965) has indicated in a range map that *trivirgata* and *gracia* overlap in the region of the Growler Mountains southwest of Ajo. If two subspecies are in fact found together in the area, we would expect to see the effects of intergradation. No such evidence has ever been reported or are we aware of any specimens that substantiate such a claim. We must therefore question the validity of Fowlie's range for *gracia* in the Ajo region.

Notes on Captive Breeding

Recent captive breeding experiments have produced enlightening results. In April 1975 a male *L.t. roscofusca* from San Diego, California, was bred to a female *L.t. trivirgata* from Cabo San Lucas, Baja California Sur. On 7 August 1975 three young were born, two of which died within a few days; however, the third specimen, a male, is alive at the time of this writing and in our possession (Fig. 2). Coloration and color pattern consist of three primary stripes of medium brown (No. 56) on a light olive gray (No. 112) background. The stripes are moderately serrated, yet fairly uniform. Scale counts are as follows: ventrals 231, subcaudals 47, dorsal scale rows 41, supralabials 14–14, infralabials 17–15, and oculars 10–10. Another cross, involving a male *L.t. trivirgata* from near San Bartolo, Baja California Sur, and a female of the same subspecies from the vicinity of Estacion Ortiz, Sonora, occurred in March 1976. Four young were born on 29 July 1976. A female from that litter (Fig. 3) yet remains in our possession. Coloration and pattern are of

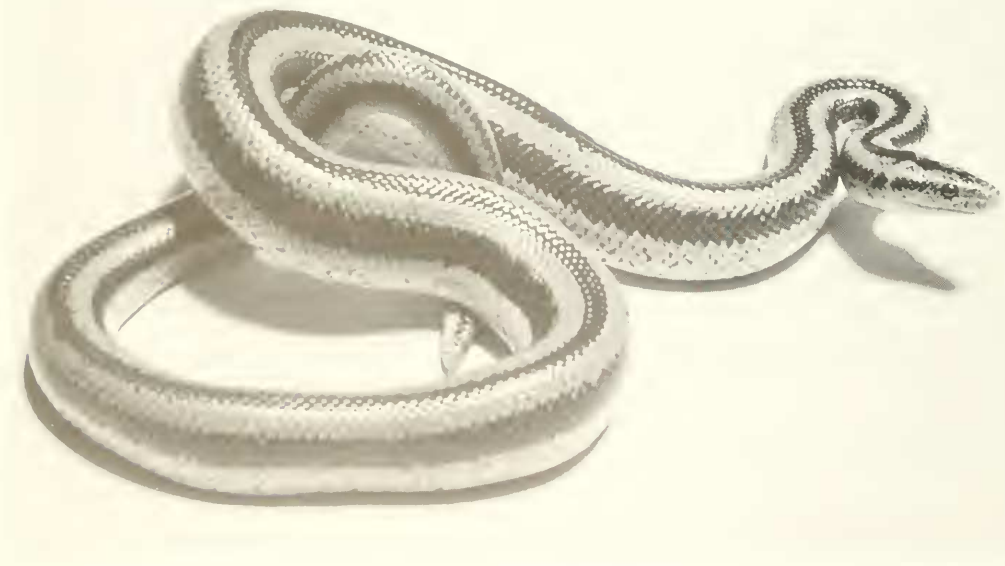

Fig. 1. Dorsal view of a *Lichanura trivirgata* x *roscofusca* intermediate from El Arco, Baja California Norte.

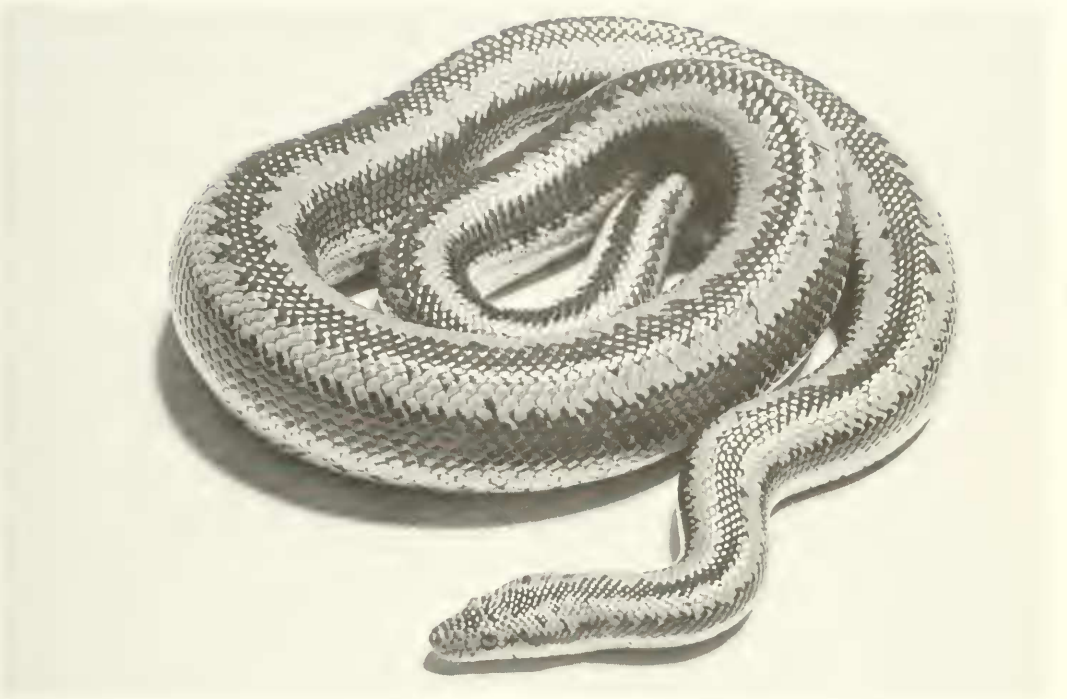

Fig. 2. Dorsal view of a *Lichanura trivirgata* x *roscofusca* hybrid; male parent is a *L. t. roscofusca* from San Diego, California, and the female parent is a *L. t. trivirgata* from Cabo San Lucas, Baja California Sur.

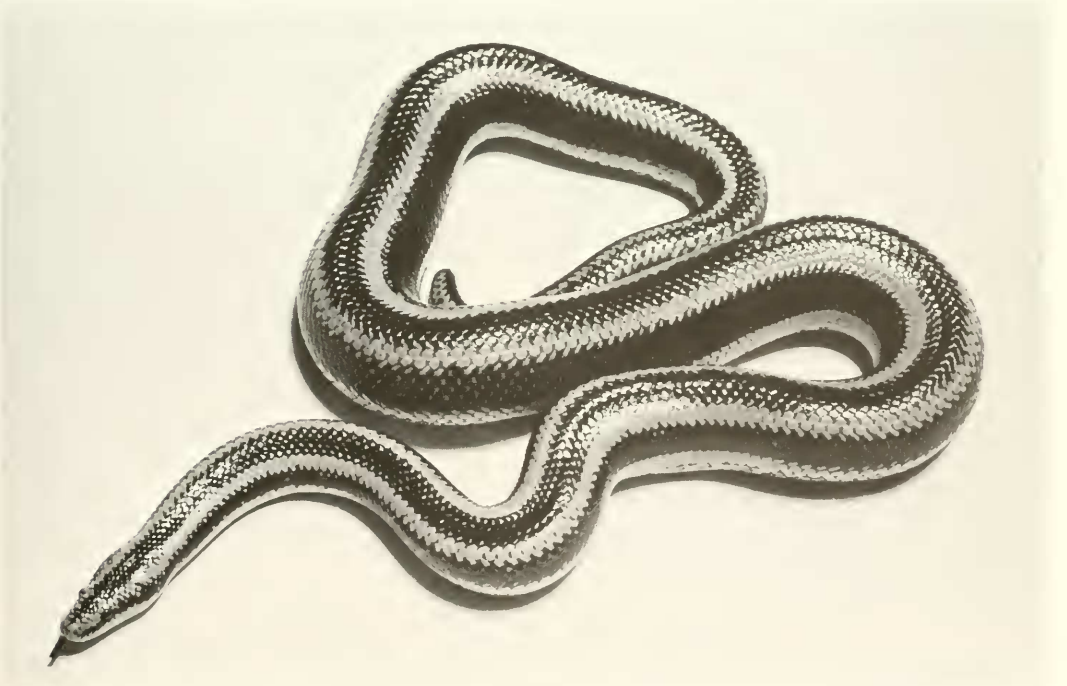

Fig. 3. Dorsal view of a *Lichanura t. trivirgata* transgulfian cross; male parent is a *L. t. trivirgata* from near San Bartolo, Baja California Sur, and the female parent is a *L. t. trivirgata* from Estacion Ortiz, Sonora.

three primary stripes of chocolate brown on a cream ground. The stripes are uniform with slightly serrated edges. Scale counts are as follows: ventrals 220, subcaudals 44, dorsal scale rows 38, supralabials 13-13, infralabials 15-14, and oculars 10-11. The female *L.t. trivirgata* transgulfian cross and a male designated as *L.t. gracia* from near Punta Prieta, Baja California Norte, were observed copulating on 16 May 1979. On 24 October 1979 three young were born, all males, each bearing well-delineated medium brown stripes and a ground of color intermediate between the parents.

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Summary

In coloration the El Arco specimen and the captive bred *trivergata* x *roseofusca* hybrid are very similar, differing only in the latter having moderately serrated stripes. These data support our consideration of the El Arco specimen as an intermediate. Since El Arco is situated in a geographical region midway between "pure" *trivergata* and *roseofusca*, indicating a continuous range, we find no alternative to considering the two taxa as being conspecific. The binomial *Lichanura trivirgata* Cope has priority over *L. roseofusca* Cope by publication date. Accordingly, we recognize *L. trivirgata* as a single, polytypic species with four subspecies (*L. t. trivirgata* Cope, *L. t. roseofusca* Cope, *L. t. gracia* Klauber, and *L. t. bostici* Ottley).

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